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BOOK REVIEWS

Highways of Progress. By JAMES J. HILL. (New York: Doubleday, Page and Company, 1910. Pp. x, 353. \$1.50 net.)

This is a series of "studies in applied economics" (p. ix) by one who has made important contributions to our recent industrial advance. The most significant chapters, one on Industrial and Railroad Consolidations, two on Oriental Trade and three on The Railroad, deal mainly with the railroad development of the northwest and might without excessive egotism have been introduced by the words of Aeneas to Dido "quaeque ipse . . . vidi et quorum pars magna fui." Perhaps even better is the chapter on The Conservation of Capital. This is an argument that the most important resource to be conserved after land and one apparently overlooked by the National Conservation Congress is capital and that our wastefulness of capital in many ways accounts for no small amount of the increased cost of living. Mr. Hill claims that "the conservation movement should give to economy in national, state and municipal expenditure a leading place on its programmes, and a share of effort commensurate with its importance and the country's need" (p. 296).

Several of these chapters have already been published as articles in *The World's Work*. All are written in vigorous, forcible English and indicate in thought and style a convincing mastery of the subjects treated. They deserve and, no doubt, will find a large circle of readers and will do much to extend a knowledge of what the conservation movement means, what are the arguments in its favor and what are some of the great industrial problems now before the country.

These chapters on subjects in which the writer is thoroughly at home and possessed of much first hand information are embraced within introductory and concluding chapters (I, II, III and XVI) which are less convincing.

The gist of his contention here is that the population of the United States in 1950 without considering its recent insular accessions or possible future expansion will be 200,000,000 and that the yield of food per acre is stationary or declining. In his own words: "This is the focal point of the whole matter, the country is approaching the inevitable advent of a population of 150,000,000 or 200,000,000, within the lifetime of those now grown to man's estate, with a potential food supply that falls as the draft upon it advances" (p. 20).

This is apparently a restatement of Malthus's argument in less guarded form and with little regard for the change of conditions between the beginning and the end of the nineteenth century. Neither branch of the thesis is maintained by conclusive evidence. In support of the position that the population in 1950 will be 200,000,000 he accepts the conclusion ascribed to Leroy-Beaulieu that "the natural increase of our population" by excess of births over deaths is "fifteen and two-tenths per thousand per year" (p. 4) and thinks that it "is a conservative estimate to add 750,000 a year for increase of population from" immigration (p. 5). He makes no mention of the decreasing birth rate, a decrease certainly more rapid than that in the death rate. Consequently the rate of increase by excess of births over deaths has decreased, is decreasing and no doubt will continue to decrease. The per cents of increase in the population of the United States of recent decades have been 1880 to 1890, 24.9 and 1890 to 1900, 20.7. Few forecasts are more certain than that the rate of increase 1900 to 1910 will not exceed that of 1890 to 1900, 20.7 per cent. But if Mr. Hill's conclusion were correct, the rate of increase, 1900 to 1910, would be 24.8 per cent which is an entirely inadmissible estimate. There is no scientific basis for any prediction of the population of the United States in 1950, but if no new and powerful influences enter to modify the changes now in progress that population will fall short of Mr. Hill's estimate by many millions.

The writer's second position, that the yield of food per acre is stationary or declining, rests on a basis equally insecure. He gives figures for the average yield of wheat per acre in New York, Kansas and Minnesota during the decade 1897 to 1906. He divides this decade into two five-year periods, 1897-1901 and 1902-1906, and finds that in each of the three states the average yield per acre was

less in the second five years than it was in the first. He concludes: "We perceive here the working of a uniform law, independent of location, soil or climate. It is the law of a diminishing return due to soil destruction" (p. 317). The weight to be attached to this evidence depends entirely upon the representative character of the three states he presents as examples. In the table containing the figures he seems to have used (Department of Agriculture Year Book 1906, p. 558) is found also a line giving the average yield of wheat for the United States at each of the same ten years. The decrease in the average annual yield per acre in the second five years over the first was for New York State one bushel, for Kansas two bushels, for Minnesota one-third of a bushel. But over the entire wheat-growing area of the United States the average annual yield per acre in the second five year period was greater by one-third of a bushel than it was in the first.

I have not been disposed to attach great weight to the figures of the Bureau of Statistics of the Department of Agriculture upon which the author relies. As the Keppel Commission reported, they hardly deserve to be called statistics. They are estimates of experts and their margin of error is undoubtedly wide. But taking those figures of average yield of wheat per acre not for selected states but for the entire United States and not for ten years but for the whole period since they began in 1866 and smoothing the curve to bring out the general trend, they show that the acreage yield during the first twenty-five years remained steadily in the neighborhood of twelve bushels but since 1890 has slowly risen to about fourteen bushels.

The increase of the American population will be far from as rapid as Mr. Hill believes. American agriculture at the present day is not the land butchery he represents it to be, but a radical readjustment of both agriculture and industry to new conditions is no doubt in progress and his book will aid many to understand it and arouse many to press it forward.

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